





Digitized by the Internet Archive  
in 2024

125

# THE JOURNAL OF BIOCHEMISTRY

EDITED FOR  
THE JAPANESE BIOCHEMICAL SOCIETY

QP  
501  
J67

VOLUME 71, 1972

## EDITORIAL BOARD

KAZUO OKUNUKI (Editor-in-Chief)

SETSURO EBASHI  
TADAO HATA  
YOSHITO KAZIRO  
JIRO KOYAMA  
SHIGEKI MINAKAMI  
DEN'ICHI MIZUNO  
TAKASHI MURACHI

KOZO NARITA  
YASUTOMI NISHIZUKA  
REIJI OKAZAKI  
RYO SATO  
KENSUKE SHIMURA  
SAKARU SUZUKI  
TAKEHIKO TANAKA

KENKICHI TOMITA  
YUJI TONOMURA  
NOBUO UI  
IKUZO URITANI  
TAMIO YAMAKAWA  
IKUO YAMASHINA

PUBLISHED MONTHLY  
BY

THE JAPANESE BIOCHEMICAL SOCIETY

COPYRIGHT, 1972 ©

BY

THE JOURNAL OF BIOCHEMISTRY

PUBLISHED

BY

THE JAPANESE BIOCHEMICAL SOCIETY

## CONTENTS OF VOLUME 71

No. 1, January, 1972

	PAGE
Variation in Glycogen, Total Free Sugars, Protein, Alkaline and Acid Phosphatases, Citrate and Inorganic Phosphorus Level in Fat Body of <i>Philosamia ricini</i> (Eri-silkworm) during Development.	R. Pant and I.D. Morris 1
Glycoproteins in Rabbit Skin. I. Isolation of Glycoproteins.	E. Shimada, T. Yamaguchi and G. Matsumura 9
Comparative Studies of Aa1 Allotypic Specificity in IgG and IgM of Rabbits. I. Demonstration and Characterization of Aa1 Allotypic Determinants Specific for IgG.	A. Seto 17
Studies on the Tryptophan Residues of Yeast Inorganic Pyrophosphatase in Relation to the Enzymatic Activity.	T. Negi, T. Samejima and M. Irie 29
Polymorphism of F-Actin. II. ATPase Activity at Acid pH.	M. Kuroda and K. Maruyama 39
Reaction of Monomeric and Dimeric Species of Heme <i>a</i> with Imidazole and Cyanide.	Y. Yanagi, I. Sekuzu, Y. Orii and K. Okunuki 47
Studies on Mold Dextranases: III. Purification and Some Enzymatic Properties of <i>Aspergillus carneus</i> Dextranase.	N. Hiraoka, J. Fukumoto and D. Tsuru 57
Studies of Amino Acid Sequences of $\alpha_1$ -Acid Glycoprotein of Human Plasma: Sequences of Glycopeptides Obtained from the NH <sub>2</sub> -Terminal Cyanogen Bromide Peptide.	K. Kitamura and I. Yamashina 65
<i>In vivo</i> Conversion of 7 $\alpha$ -Hydroxycholesterol- <sup>14</sup> C to 3 $\beta$ , 7 $\alpha$ -Dihydroxychol-5-enoic- <sup>14</sup> C and 4-enoic- <sup>14</sup> C Acids as well as to Allocholic- <sup>14</sup> C Acid in the Hen.	H. Yamasaki and K. Yamasaki 77
Identification of 3 $\beta$ , 7 $\alpha$ -Dihydroxychol-5-enoic Acid in Fistula Bile of the Rat Given Cholesterol-4- <sup>14</sup> C and DL-Mevalonate-2- <sup>14</sup> C.	Y. Ayaki and K. Yamasaki 85
The Organized Interaction of Muscle Proteins. I. The Internal Freedom of Tropomyosin in the Complex of Troponin-tropomyosin-F-actin.	K. Mihashi 91
Inhibition of L-Glycerol 3-Phosphate Acyltransferase from <i>Escherichia coli</i> by <i>cis</i> -9, 10-Methylenehexadecanoic Acid.	M. Kito, S. Aibara, K. Hasegawa and T. Hata 99
Studies on N-Acetyl- $\beta$ -D-glucosaminidase of <i>Aspergillus oryzae</i> . II. Substrate Specificity of the Enzyme.	T. Mega, T. Ikenaka and Y. Matsushima 107
The Pre-steady State of the Myosin-Adenosine Triphosphate System. XI. Formation and Decomposition of the Reactive Myosin-Phosphate-ADP Complex.	A. Inoue, K. Shibata-Sekiya and Y. Tonomura 115
Cold-adaptation II. Effect of Thyroxine on Phosphoenolpyruvate Carboxykinase in Rat Liver in Normal and Cold Environments.	K. Nagai and H. Nakagawa 125
Structural Analysis of the Alanine-rich, Arginine-rich Histone. I. Amino Acid Compositions and Sequences of Tryptic Peptides.	K. Yokotsuka, A. Kikuchi and K. Shimura 133
SHORT COMMUNICATIONS	
Activation of Actomyosin-ATPase by Tropomyosin.	M. Shigekawa and Y. Tonomura 147
Effect of Imidazole on Adipose Tissue Lipase.	H. Okuda and S. Fujii 151

## PRELIMINARY NOTES

Antibody Specific for Actin from Frog Skeletal Muscles.	<i>T. Hirabayashi and Y. Hayashi</i>	153
Phosphoenolpyruvate Carboxylase of <i>Escherichia coli</i> : Influence of Allosteric Effectors on the Rate of Inactivation by N-Ethylmaleimide.	<i>H. Teraoka, S. Naito, K. Izui and H. Katsuki</i>	157
Inactivation of Acid Proteases from <i>Rhizopus chinensis</i> , <i>Aspergillus saitoi</i> and <i>Mucor pusillus</i> , and Calf Rennin by Diazoacetylnorleucine Methyl Ester.	<i>K. Takahashi, F. Mizobe and W.-J. Chang</i>	161
The Amino Acid Sequence of Soybean Trypsin Inhibitor (Kunitz).	<i>T. Koide, S. Tsunashawa and T. Ikenaka</i>	165
Interaction of Myosin and F-Actin in Solution.	<i>S. Abe and K. Maruyama</i>	169

No. 2, February, 1972

Metabolic Significance of Adenosine in the Mouse Erythrocytes.	<i>H. Miyazaki and Y. Minaki</i>	173
Specificity-determining Site of $\alpha$ -Chymotrypsin. I. Kinetic Investigation of Aromatic Amino Compounds and Phenylalanine Ester Derivatives in $\alpha$ -Chymotrypsin-catalyzed Hydrolysis.	<i>N. Yoshida and S. Ishii</i>	185
Specificity-determining Site of $\alpha$ -Chymotrypsin. II. Inactivation of $\alpha$ -Chymotrypsin by Aromatic Diazonium Compounds.	<i>N. Yoshida and S. Ishii</i>	193
Purification and Properties of Whale Thyroid-stimulating Hormone. I. Evidence for the Presence of Multiple Components and Their Origin.	<i>H. Tamura and N. Ui</i>	201
Studies on the Cytoplasmic Membranes of <i>Bacillus megaterium</i> KM. I. Fractionation of the Cytoplasmic Membranes by Alkali-treatment.	<i>T. Yamaguchi and K. Sakaguchi</i>	211
Regulation of Aspartate Family Amino Acid Biosynthesis in <i>Brevibacterium flavum</i> . V. Properties of Homoserine Kinase.	<i>R. Miyajima and I. Shioi</i>	219
Kinetic Study on Streptolysin O.	<i>Y. Kanbayashi, M. Hotta and J. Koyama</i>	227
A Simple Method for Linkage Analysis of the Reducing-terminal of Oligosaccharides.	<i>H. Yamaguchi and M. Kuriyama</i>	239
Immunochemical Studies on Guinea Pig Non-Precipitating Antibodies to Ovalbumin.	<i>T. Nakamura, K. Ofune, K. Tamoto and J. Koyama</i>	245
The Johnston-Ogston Effect in Sedimenting Proteoglycan Mixtures.	<i>M. Janado, L.W. Nichol and J.R. Dunstone</i>	257
A Tryptophyl Circular Dichroic Band at 305 m $\mu$ of Hen Egg-white Lysozyme.	<i>K. Ikeda and K. Hamaguchi</i>	265
Fluorescence Change of Auramine O Bound to Chromatophores of <i>Rhodospirillum rubrum</i> —Analysis in Connection to Ionic Environment and Ion Transport.	<i>Y. Kobayashi and M. Nishimura</i>	275
Studies on Energy and Electron Transfer Systems in Green Photosynthetic Bacterium <i>Chloropseudomonas ethyllica</i> Strain 2K. I. Isolation and Characterization of Cytochromes from <i>Chloropseudomonas ethyllica</i> Strain 2K.	<i>Y. Shioi, K. Takamiya and M. Nishimura</i>	285
Studies on the Respiratory System of <i>Aspergillus oryzae</i> . IV. Low Temperature Difference Spectra of Mitochondria from Mycelia Grown in the Presence and Absence of Chloramphenicol.	<i>S. Wakiyama and Y. Ogura</i>	295
Role of Divalent Metal Cations in Heavy Meromyosin-Adenosine Triphosphate Complex.	<i>M. Yazawa, F. Morita and K. Yagi</i>	301

	PAGE
Reactions of the Oxyform of Horseradish Peroxidase.	<i>M. Tamura and I. Yamazaki</i> 311
Activation of Muscular Phosphorylase <i>b</i> Kinase by a Minute Amount of Ca Ion.	<i>E. Ozawa</i> 321
Proteolytic Digestion of Red Cell Ghosts: Evidence for Two Ghost Populations Differing in Susceptibility to Proteolysis.	<i>T. Okuda, A. Ito and R. Sato</i> 333

## SHORT COMMUNICATIONS

Effects of Adrenalectomy and Castration on Enzymes Metabolizing Drugs in Mouse Liver.	<i>F. Wada, M. Yoshida and F. Isohashi</i> 343
Further Evidence for the Universality of the Genetic Code <i>in vivo</i> .	<i>Y. Nozu, T. Ohno and Y. Okada</i> 347
The Difference Absorption Spectrum of Myosin Induced by Adenosine Triphosphate, Adenosine Diphosphate, and Inorganic Pyrophosphate.	<i>H. Yoshino, F. Morita and K. Yagi</i> 351

## PRELIMINARY NOTES

Purification of M-Protein.	<i>T. Masaki and O. Takaiti</i> 355
Separation of a Tropomyosin Fraction with Genus- and Organ-nonspecific Antigenic Property from Purified Preparation of Frog Tropomyosin.	<i>T. Ishimoda and Y. Hayashi</i> 359
Affinity Chromatography of Trypsin Using a Sepharose Derivative Coupled with Peptides Containing L-Arginine in Carboxyl Termini.	<i>K. Kasai and S. Ishii</i> 363
Determination of the Glycosylated Hydroxylysines in Several Invertebrate Collagens.	<i>S. Kimura</i> 367

No. 3, March, 1972

Circular Dichroism of Human Lysozyme.	<i>K. Ikeda, K. Hamaguchi, S. Miwa and T. Nishina</i> 371
Acid Denaturation of Bence Jones Proteins.	<i>T. Azuma, K. Hamaguchi and S. Migita</i> 379
Membrane-bound Adenosine Triphosphatase of <i>Escherichia coli</i> . I. Partial Purification and Properties.	<i>H. Kobayashi and Y. Anraku</i> 387
Photooxidation of Adenine and Its Nucleotidse in the Presence of Riboflavin. IV. Photochemical Reaction and Photoproducts of NAD.	<i>K. Uehara and T. Hayakawa</i> 401
Hemocyanin from <i>Dolabella auricularia</i> . II. Dissociation by EDTA and Re-association by Calcium Ion.	<i>N. Makino</i> 417
Inhibition by A Polyanion (Dextran Sulfate) of Activation of Respiration of Isolated Rat-liver Mitochondria by AMP and ADP.	<i>E. Ogata and K. Kondo</i> 423
Studies on Cytochrome <i>a</i> . XX. Preparation and Some Properties of Proteinase-treated Cytochrome <i>a</i> .	<i>T. Yamamoto and K. Okunuki</i> 435
Occurrence of Different Types of Cytochrome <i>b<sub>5</sub></i> -like Hemoprotein in Liver Mitochondria and Their Intramitochondrial Localization.	<i>K. Fukushima, A. Ito, T. Omura and R. Sato</i> 447
Specific Precipitation of Catalase-synthesizing Ribosomes by Anti-catalase Antiserum.	<i>T. Higashi, H. Kudo and K. Kashiwagi</i> 463
Studies on Prekallikrein of Bovine Plasma. I. Purification and Properties.	<i>H. Takahashi, S. Nagasawa and T. Suzuki</i> 471
Metabolism of Deoxyribonucleotides. IV. Purification and Properties of Deoxycytidine Kinase of Calf Thymus.	<i>Y. Kozai, S. Sonoda, S. Kobayashi and Y. Sugino</i> 485

Accumulation of a "DNA-Masking Protein" in <i>E. coli</i> under Inhibitory Conditions of DNA Synthesis.	A. Taketo and S. Kuno	497
Sensitivity of <i>Escherichia coli</i> to Viral Nucleic Acid. III. Competence of Glycine-Spheroplasts.	A. Taketo	507
Sensitivity of <i>Escherichia coli</i> to Viral Nucleic Acid. IV. Transfection of Phage DNA to Mutant Thermosensitive in Wall Synthesis.	A. Taketo, A. Hayashi and S. Kuno	513
Lack of Direct Correlation between High Rate of Histamine Formation and Protein Synthesis in Fetal Rat Liver.	B. Grahn	519
Purification and Properties of Whale Thyroid-stimulating Hormone. II. Isolation of Multiple Components.	H. Tamura and N. Ui	531

## SHORT COMMUNICATIONS

A New Buffer System for Disc Electrophoresis Suitable for Slightly Basic Proteins.	H. Tamura and N. Ui	543
--	---------------------	-----

Phenylalanine Hydroxylase Activity in Riboflavin Deficient Rats.	K. Shimomura, T. Fukushima and T. Danno	547
--	---	-----

Absorption and Fluorescence Spectra of Riboflavin Di- and Tributyrate.	K. Yagi, M. Osamura and N. Ohishi	551
--	-----------------------------------	-----

Chemical Modification of Neutral Subtilopeptidase <i>amylosacchariticus</i> : Reduction of the Nitrotyrosyl Enzyme with Na-Hydrosulfite.	D. Tsuru and T. Hirose	555
--	------------------------	-----

Light-induced Changes in Resistivity of Chloroplast Membrane Fragments to Modification with Diazonium-1, 2, 4-triazole.	K. Nakaya, K. Ariga, F. Obata and Y. Nakamura	559
---	---	-----

A Colorimetric Method for Quantitative Determination of Glycolic Acid with 2, 7-Dihydroxy-naphthalene.	K. Takahashi	563
--	--------------	-----

Chemical Modification of Pseudouridylic Acid in Isoleucine Transfer Ribonucleic Acid from <i>Torulopsis utilis</i> with a Radioactive Carbodiimide.	T. Mizutani	567
---	-------------	-----

Relationship between Rates of Ca-uptake and Affinities for Ca of the Sarcoplasmic Reticulum.	Y. Ogawa	571
--	----------	-----

## PRELIMINARY NOTE

Construction of 30S Particles from Ribosomal Proteins and 23S Particles Induced by Ultraviolet Light.	K. Nozu and K. Matsuzaki	575
---	--------------------------	-----

No. 4, April, 1972

The Metabolism <i>in Vivo</i> and <i>in Vitro</i> of 3-Oxo-7 $\alpha$ -hydroxychol-4-enoic Acid-24- $^{14}\text{C}$ as an Intermediate of Chenodeoxycholic Acid Biogenesis.	S. Ikawa, Y. Ayaki, M. Ogura and K. Yamasaki	579
Chemical Modification of Pseudouridylic Acid in Valine Transfer Ribonucleic Acid I from <i>Torulopsis utilis</i> with a Radioactive Carbodiimide.	T. Mizutani	589
Thermal Modification of Structure of Tropomyosin. I. Changes in the Intensity and Polarization of the Intrinsic Fluorescence (Tyrosine).	A. Satoh and K. Mihashi	597
Thermal Modification of Structure of Tropomyosin. II. Fluorescence Depolarization of Tropomyosin-Fluorescein Isothiocyanate Conjugate; A Change in the Rotational Relaxation Time Near Physiological Temperature.	K. Mihashi	607

## CONTENTS OF VOLUME 71

v

	PAGE
Effect of Corticotrophin on Protein and Phospholipid Metabolism in Subcellular Fractions of Adrenal Glands.	S. Ichii, A. Ikeda, A. Ohla and M. Izawa 615
Some Properties of Long Fatty Acyl-Coenzymé A Thioesterase in Rat Organs.	S. Kurooka, K. Hosoki and Y. Yoshimura 625
A Glycoprotein from Bovine Nasal Cartilage. Preparation Methods and Properties.	M. Janado and J. Dunstone 635
A Nitrite Reductase from <i>Achromobacter cycloclastes</i> .	H. Iwasaki and T. Matsubara 645
Studies on Mold Dextranases. IV. Substrate Specificity of <i>Aspergillus carneus</i> Dextranase.	D. Tsuru, N. Hiraoka and J. Fukumoto 653
Denaturation of Myosin and Its Subfragments. II. Effect of Thermal Treatment on Light Mero-myosins.	K. Samejima, J. Morita, K. Takahashi and T. Yasui 661
Regulation of Hexokinase Isozymes: Apparent Interconversion between Type II and Type III or Inactive Enzyme Complex Formation in Rat Tissues.	K. Murakami and S. Ishibashi 675
Photooxidation of Adenine and Its Nucleotides in the Presence of Riboflavin. V. Photochemical Reaction and Photoproducts of 5'-AMP.	K. Uehara and T. Hayakawa 685
Partial Specific Volume of Collagen.	H. Noda 699
Size and Shape Determination of Native and Defatted Bovine Serum Albumin Monomers. II. Influence of the Fatty Acid Content on the Conformation of Bovine Serum Albumin Monomers.	F. Soetewey, M. Rosseneu-Motreff, R. Lamote and H. Peeters 705
Inactivation of Myosin ATPase by Condensed Polysilicic Acid Powder.	Y. Matsumura and T. Matsumura 711
Nicotinamide and Its Methyltransferase as Apparent Inhibitors of tRNA Methylase.	Y. Kuchino and H. Endo 719
Partial Purification of NADH-Cytochrome <i>b</i> <sub>5</sub> Reductase from Rabbit Liver Microsomes with Detergents and Its Properties.	K. Mihara and R. Sato 725

## SHORT COMMUNICATIONS

Separation and Molecular Weight Estimation of Silk Proteins by Polyacrylamide Gel Electrophoresis.	S. Tokutake and T. Okuyama 737
The Difference in the Availabilities of Initiation Points of Phage RNA Cistrons in Their Translation.	Y. Ota, T. Ohta and K. Imahori 743
A New-type of Copper-Protein from <i>Alcaligenes faecalis</i> .	T. Matsubara and H. Iwasaki 747

## PRELIMINARY NOTES

Detection of Arginine Esterase of Various Kallikrein Preparations on Gellified Electrophoretic Media.	Y. Fujimoto, H. Moriya, K. Yamaguchi and C. Moriwaki 751
The Onset of Myofibrillar Protein Synthesis in Chick Embryo <i>in Vivo</i> .	T. Masaki and C. Yoshizaki 755

No. 5, May, 1972

Conformational Changes in Submitochondrial Particles of Beef Heart.	O. Hatase and T. Oda 759
A Neutral Proteinase from <i>Streptomyces naraensis</i> . III. An Improved Purification and Some Physicochemical Properties.	A. Hiramatsu and T. Ouchi 767

The Action Mechanism of Cerulenin. I. Effect of Cerulenin on Sterol and Fatty Acid Biosyntheses in Yeast.	<i>S. Nomura, T. Horiuchi, S. Ōmura and T. Hata</i>	783
Isolation and Properties of a Pyruvate Dehydrogenase Complex from the Yeast <i>Hansenula miso</i> .	<i>T. Hirabayashi and T. Harada</i>	797
Effect of Adenine on the Riboflavin-Sensitized Photoreaction. II. Effect of Adenine on the Photodynamic Inactivation of Transforming Deoxyribonucleic Acid in the Presence of Riboflavin.	<i>K. Uehara, T. Mizoguchi and S. Hosomi</i>	805
Effect of Adenine on the Riboflavin-Sensitized Photoreaction. III. Effect of Adenine on the Photodegradation of Guanine Residues in Deoxyribonucleic Acid in the Presence of Riboflavin.	<i>K. Uehara, T. Mizoguchi and S. Hosomi</i>	811
Fractionation and Some Properties of the Proteolytically Active Components of Bromelains in the Stem and the Fruit of the Pineapple Plant.	<i>S. Ota, K. Horie, F. Hagino, C. Hashimoto and H. Date</i>	817
Studies on Soybean Trypsin Inhibitors. III. Isolation and Sequence Determination of the Tryptic Peptides of Bowman-Birk Soybean Proteinase Inhibitor.	<i>S. Odani, T. Koide and T. Ikenaka</i>	831
Studies on Soybean Trypsin Inhibitors. IV. Complete Amino Acid Sequence and the Anti-proteinase Sites of Bowman-Birk Soybean Proteinase Inhibitor.	<i>S. Odani and T. Ikenaka</i>	839
Immune Responses to the 4-Azoquinoline 1-Oxide Group in Rabbits and Mice.	<i>S. Nakashima, K. Sugimura and S. Ono</i>	849
The Inhibition Mechanism of the Cytochrome Oxidase Reaction. II. Classification of Inhibitors Based on Their Modes of Action.	<i>S. Yoshikawa and Y. Orii</i>	859
The Inhibition Mechanism of the Cytochrome Oxidase Reaction. III. Combined Effects of Inhibitors on Cytochrome Oxidase.	<i>S. Yoshikawa and Y. Orii</i>	873
Histone Synthesis during Synchronized Division Cycle of <i>Tetrahymena</i> .	<i>K. Hamana, T. Mita and K. Iwai</i>	877
Isolation of a New Bile Acid, 3 $\alpha$ ,7 $\alpha$ ,12 $\alpha$ -Trihydroxy-5 $\alpha$ -cholestane-26-oic Acid, from Lizard Bile.	<i>K. Okuda, M.G. Horning and E.C. Horning</i>	885
Kinetic Studies on Acridine Orange-DNA Interaction. A Branched Mechanism Involving Intercalation and Outside "Dimerization."	<i>M. Sakoda, K. Hiromi and K. Akasaka</i>	891
SHORT COMMUNICATIONS		
Thrombin-Catalyzed Conversion of Fibrinogen to Fibrin.	<i>M. Bando, A. Matsushima, J. Hirano and Y. Inada</i>	897
Effect of Pressure on the Combining Power of Hemoglobin for Ethyl Isocyanide.	<i>K. Suzuki, Y. Taniguchi and K. Izui</i>	901
Amino Acid Composition of Skin Collagen from Deep-sea Fish.	<i>D. Fujimoto</i>	905
Simultaneous N-Acetylation and O-Trimethylsilylation of Hexosamines for Gas-liquid Chromatography.	<i>S. Hara and Y. Matsushima</i>	907
PRELIMINARY NOTES		
Inactivation of Ribosomes by a Factor Induced by Colicin E3.	<i>Y. Ohsumi and A. Maeda</i>	911
Interconversion of High- and Low-spin States of Cytochrome P-450 Solubilized from Yeast Microsomes.	<i>Y. Yoshida and H. Kumaoka</i>	915
Evidence for the Presence of a Latent Form of Collagenase in Human Rheumatoid Synovial Fluid.	<i>S. Abe and Y. Nagai</i>	919
Possible Participation of Cyclic AMP in the Regulation of $\delta$ -Aminolevulinic Acid Synthesis in Rat Liver.	<i>H.J. Kim and G. Kikuchi</i>	923
Allocholic Acid, a Metabolite of 7 $\alpha$ -Hydroxycholesterol in the Rat and Rabbit.	<i>K. Yamasaki, Y. Ayaki and G. Yamasaki</i>	927

No. 6, June, 1972

	PAGE
The Redox Reactions in Propionic Acid Fermentation. I. Occurrence and Nature of an Electron Transfer System in <i>Propionibacterium arabinosum</i> .	N. Sone 931
The Nucleases from <i>Acrocylindrium</i> sp. I. Purification and Properties of Ribonuclease.	I. Suhara, F. Kawashima-Kusaba, Y. Nakao, M. Yoneda and E. Ohmura 941
Regulation of Aspartate Family Amino Acid Biosynthesis in <i>Brevibacterium flavum</i> . VI. Effects of Isoleucine and Valine on Threonine Dehydratase Activity and Its Formation.	R. Miyajima and I. Shioi 951
Possible Occurrence of a Succinate-glycine Cycle in <i>Rhodospirillum rubrum</i> .	K. Shigesada 961
pH Profiles of the Kinetic Parameters and Photoinactivation of Ribonuclease from <i>Rhizopus</i> sp.	T. Komiya and M. Irie 973
Glucose-6-phosphate Dehydrogenase from Sweet Potato: Substrate-induced Change in the Sedimentation Coefficient of the Enzyme.	S. Muto and I. Uritani 981
Hemocyanin from <i>Dolabella auricularia</i> . III. Recombination of $\text{Ca}^{2+}$ Ion to EDTA-treated Hemocyanin.	N. Makino 987
Structure and Function of D-Amino Acid Oxidase. IV. Electrophoretic and Ultracentrifugal Approach to the Monomer-Dimer Equilibrium.	K. Yagi and N. Ohishi 993
Catabolite Repression of Cellulase Formation in <i>Trichoderma viride</i> .	T. Nisizawa, H. Suzuki and K. Nisizawa 999
Studies on Microsomal Glucose-6-phosphate Dehydrogenase of Rat Liver.	H. Kimura and M. Yamashita 1009
Studies on Regulatory Functions of Malic Enzymes. I. Metabolic Functions of NAD- and NADP-linked Malic Enzymes in <i>Escherichia coli</i> .	T. Murai, M. Tokushige, J. Nagai and H. Katsuki 1015
Studies on the Role of Basic Amino Acid Residues of ACTH Peptide in Steroidogenesis by Isolated Adrenal Cells.	M. Nakamura 1029
Multimolecular Forms of Pyruvate Kinase from Rat and Other Mammalian Tissues. I. Electrophoretic Studies.	K. Imamura and T. Tanaka 1043
Indirect Correlation between Hydroxylation Activities and Oxidation-Reduction of Cytochrome P-450.	Y. Ichikawa and T. Yamano 1053
 SHORT COMMUNICATIONS	
Feedback Inhibition of Pantothenate Kinase by Coenzyme A and Possible Role of the Enzyme for the Regulation of Cellular Coenzyme A Level.	T. Karasawa, K. Yoshida, K. Furukawa and K. Hosoki 1065
Effect of Guanidine Hydrochloride on Circular Dichroism of Yeast tRNA.	N. Okabe, K. Suyari and K. Tomita 1069
Anomalous Behavior of Heavy Meromyosin-F-Actin Solution at Low Velocity Gradients.	K. Maruyama and S. Abe 1073
Hydrolysis of Amino Acid Ester Derivatives by Alkaline Proteinase C of Pronase.	Y. Narahashi 1077
The Phospholipids of a Facultatively Thermophilic Strain of <i>Bacillus stearothermophilus</i> .	K.C. Oo and Y.H. Lee 1081
Substrate Activation and Substrate Inhibition of Trypsin-like Enzymes from Three Strains of <i>Streptomyces</i> Species.	H. Nakata, N. Yoshida, Y. Narahashi and S. Ishii 1085
Isolation of Noncollagen Protein Associated with Collagen from the Muscle Layer of <i>Ascaris lumbricoides</i> .	D. Fujimoto and K. Iizuka 1089

	PAGE
PRELIMINARY NOTES	
The Role of Alanine and Serine in Hepatic Gluconeogenesis.	
	<i>E. Ishikawa, T. Aikawa and H. Matsutaka</i> 1093
The Roles of Alanine as a Major Precursor among Amino Acids for Hepatic Gluconeogenesis and as a Major End Product of the Degradation of Amino Acids in Rat Tissues.	
	<i>E. Ishikawa, T. Aikawa and H. Matsutaka</i> 1097
Phosphorylation of the $\text{Ca}^{2+}$ - $\text{Mg}^{2+}$ -dependent ATPase of the Sarcoplasmic Reticulum Coupled with Cation Translocation.	
	<i>S. Yamada and Y. Tonomura</i> 1101